WHAT IS CLAIMED IS:

1. A method of transmitting at least one light signal utilizing a magnetic bubble waveguide comprising a plurality of magnetic bubble domains, said method comprising:

polarizing at least one spread-spectrum modulated light signal in a polarized direction;

configuring the magnetic bubble waveguide in accordance with a time-varying pseudo-random code sequence such that the plurality of magnetic bubble domains are in a time varying position representative of the pseudo-random code sequence; and

transmitting the at least one polarized spread-spectrum modulated light signal through the magnetic bubble waveguide such that a position of at least one magnetic bubble domain at least partially rotates the at least one spread-spectrum modulated light signal by a predetermined angle from the polarized direction based upon the time-varying position of the magnetic bubble domains.

2. A method according to Claim 1 further comprising generating the time-varying pseudo-random code sequence before configuring the magnetic bubble waveguide.

3. A method according to Claim 1 further comprising modulating at least one electrical signal representative of the at least one light signal according to a spread-spectrum modulation technique and thereafter converting the at least one electrical signal to the at least one light signal, wherein modulating the at least one electrical signal occurs before polarizing the at least one spread-spectrum modulated light signal.

4. A method according to Claim 3, wherein converting the at least one light signal comprises passing the at least one electrical signal through a light emitting transmitter to thereby generate the at least one light signal.

5. A method according to Claim 1, wherein the magnetic bubble waveguide is a plurality of magnetic bubble waveguides arranged in a two-dimensional array, said method further comprising:

passing the at least one spread-spectrum modulated light signal through a light spreading element such that the at least one spread-spectrum modulated light signal spreads into a plurality of spread-spectrum modulated light signals, wherein transmitting comprises transmitting the plurality of polarized spread-spectrum modulated light signals through the array of magnetic bubble waveguides such that a position of at least one magnetic bubble domain in each magnetic bubble waveguide at least partially rotates at least one of the plurality of spread-spectrum modulated light signals by a predetermined angle from the polarized direction based upon the time-varying position of the magnetic bubble domains, wherein transmitting the plurality of polarized spread-spectrum modulated light signals through the array of magnetic bubble waveguides generates a plurality of spread polarization modulated light signals; and

passing the plurality of spread polarization modulated light signals through a light focusing element after transmitting the plurality of polarized spread-spectrum modulated light signals such that the plurality of spread polarization modulated light signals are focused into at least one spread polarization modulated light signal.

6. A spread polarization transmitter for transmitting at least one light signal comprising:

a spread-spectrum communication apparatus for spread-spectrum modulating the at least one light signal; and

a polarization modulator comprising:

a polarizer capable of polarizing the at least one spread-spectrum modulated light signal in a polarized direction; and

a magnetic bubble waveguide configured in accordance with a pseudo-random polarization code sequence such that the plurality of magnetic bubble domains assume a time varying position representative of the pseudo-random polarization code sequence, wherein the magnetic bubble waveguide is capable of receiving at least one polarized, spread-spectrum modulated light signal and at least partially rotating the at least one polarized, spread-spectrum modulated light signal by a predetermined angle from the polarized direction during transmission therethrough based upon the time-varying position of the magnetic bubble domains to thereby create at least one spread polarization modulated light signal.

7. A spread polarization transmitter according to Claim 6 further comprising a transmission element capable of transmitting the at least one spread polarization modulated light signal.

8. A spread polarization transmitter according to Claim 6, wherein said polarization modulator further comprises a pseudo-random polarization code generator capable of generating the time-varying pseudo-random code sequence.

9. A spread polarization transmitter according to Claim 6, wherein said spread-spectrum communication apparatus is capable of modulating at least one electrical signal representative of the at least one light signal according to a spread-spectrum modulation technique and thereafter converting the at least one electrical signal to the at least one light signal.

10. A spread polarization transmitter according to Claim 9, wherein said spread-spectrum communication apparatus includes a light emitting transmitter capable of generating the at least one light signal as the at least one electrical signal passes therethrough.

11. A spread polarization transmitter according to Claim 6, wherein the magnetic bubble waveguide comprises a plurality of magnetic bubble waveguides arranged in a two-dimensional array and configured in accordance with at least one pseudo-random polarization code sequence such that the plurality of magnetic bubble domains of each magnetic bubble waveguide assumes a time varying position representative of a respective pseudo-random polarization code sequence, wherein said polarization modulator further comprises:

at least one light spreading element capable of spreading the at least one polarized, spread-spectrum modulated light signal into a plurality of polarized, spread-spectrum modulated light signals for input into the array of magnetic bubble waveguides, wherein each magnetic bubble waveguide is capable of receiving at least one polarized, spread-spectrum modulated light signal of the plurality of polarized, spread-spectrum modulated light signals and at least partially rotating the at least one polarized, spread-spectrum modulated light signal by a predetermined angle from the

polarized direction during transmission therethrough based upon the time-varying position of the magnetic bubble domains, and wherein transmitting the plurality of polarized spread-spectrum modulated light signals through the array of magnetic bubble waveguides generates a plurality of spread polarization modulated light signals; and

at least one light focusing element capable of focusing the plurality of spread polarization modulated light signals into at least one spread polarization modulated light signal.

12. A spread polarization communication system comprising:

a transmitter device comprising:

a spread-spectrum modulation apparatus for spread-spectrum modulating at least one light signal;

a polarization modulator comprising a plurality of magnetic bubble domains, and configured in accordance with a time-varying pseudo-random polarization code sequence such that the plurality of magnetic bubble domains assume a time-varying position representative of the pseudo-random polarization code sequence, wherein said polarization modulator is capable of polarizing the at least one spread-spectrum modulated light signal in a polarized direction and thereafter polarization modulating the at least one polarized spread-spectrum modulated light signal during transmission therethrough, wherein transmitting the at least one spread-spectrum modulated light signal through said polarization modulator creates at least one spread polarization modulated light signal; and

a transmission element capable of transmitting the at least one spread polarization modulated light signal; and

a receiver capable of receiving the at least one spread polarization modulated light signal and thereafter demodulating the at least one spread polarization modulated light signal in accordance with modulation provided by the polarization modulator and thereafter with modulation provided by the spread-spectrum modulation apparatus to thereby obtain a representation of the at least one light signal.

13. A spread polarization communication system according to Claim 12, wherein the at least one light signal includes an original polarization, wherein said

receiver is further capable of polarization filtering the at least one spread polarization modulated light signal after demodulating the at least one spread polarization modulated light signal in accordance with the polarization modulator to thereby obtain a representation of the original polarization of the at least one light signal.

14. A spread polarization communication system according to Claim 12, wherein the at least one light signal includes an original polarization, and wherein said receiver comprises:

a reception element capable of receiving the at least one spread polarization modulated light signal;

a polarization demodulator comprising a plurality of magnetic bubble domains, and configured in accordance with a time-varying position representative of an inverse of the time-varying pseudo-random polarization code sequence such that the plurality of magnetic bubble domains assume a time-varying position representative of the inverse of the time-varying pseudo-random polarization code sequence, wherein said polarization demodulator is capable of polarization demodulating the at least one spread polarization modulated light signal during transmission therethrough, wherein transmitting the at least one spread polarization modulated light signal through said polarization demodulator recreates the at least one spread-spectrum modulated light signal;

a polarization filter capable of polarization filtering the at least one spread-spectrum modulated light signal as the at least one spread-spectrum modulated light signal passes therethrough to thereby obtain a representation of the original polarization of the at least one light signal; and

a spread-spectrum demodulation apparatus capable of spread-spectrum demodulating the at least one spread-spectrum modulated light signal to thereby recreate the at least one light signal.

15. A spread polarization communication system according to Claim 12, wherein said spread-spectrum demodulation apparatus is capable of converting the at least one spread-spectrum modulated light signal into at least one spread-spectrum modulated electrical signal representative of the at least one spread-spectrum modulated light signal and thereafter demodulating the at least one spread-spectrum

modulated electrical signal to thereby recreate at least one electrical signal representative of the at least one light signal.

16. A spread polarization communication system according to Claim 15, wherein said spread-spectrum demodulation apparatus includes a light detecting receiver capable of converting the at least one spread-spectrum modulated light signal.

17. A spread polarization communication system according to Claim 12, wherein said polarization modulator further comprises a pseudo-random polarization code generator capable of generating the time-varying pseudo-random code sequence.

18. A spread polarization communication system according to Claim 12, wherein said spread-spectrum modulation apparatus is capable of spread-spectrum modulating at least one electrical signal representative of the at least one light signal and thereafter converting the at least one electrical signal to the at least one light signal.

19. A spread polarization communication system according to Claim 18, wherein said spread-spectrum modulation apparatus includes a light emitting transmitter capable of generating the at least one light signal as the at least one electrical signal passes therethrough.

20. A spread polarization communication system according to Claim 12, wherein said polarization modulator comprises a plurality of polarization modulators disposed in a two-dimensional array, wherein said transmitter device further comprises:

at least one light spreading element capable of spreading the at least one polarized, spread-spectrum modulated light signal into a plurality of polarized, spread-spectrum modulated light signals for input into the array of polarization modulators, wherein transmitting the at least one spread-spectrum modulated light signal through said plurality of polarization modulators creates a plurality of spread polarization modulated light signals; and

at least one light focusing element capable of focusing the plurality of spread polarization modulated light signals into at least one spread polarization modulated light signal.